

REMARKS

STATUS

The Examiner determined applicant's arguments with respect to Kool et al. were persuasive and the rejection of claims based on Kool et al. was withdrawn.

Claim 10 was objected to because of informalities (grammatical error).

Claims 10-13, 16-17, 22-23, and 26 were rejected under 35 USC 102(b) as being clearly anticipated by Hocheng (US 6,315,885).

Claim 24 was rejected under 35 USC 103(a) as being unpatentable over Hocheng.

Claims 14, 20, 21 and 25 were rejected under 35 USC 103(a) as being unpatentable over Hocheng in view of Tyler et al. (US 4,004,992).

Claims 18-19 were rejected under 35 USC 103(a) as being unpatentable over Hocheng in view of Kool et al. (US 6,599,416).

APPLICANT'S ACTIONS AND ARGUMENTS

Claims 1-9 and 15 have previously been canceled.

Claim 16 has been canceled herein.

Claims 10-14, and 17-26 remain active in the application.

Claims 10 and 13 have been amended.

The present invention presents an apparatus and process for removing surface regions of a component.

With regards to the objection of claim 10 because of informalities (grammatical error):

Applicant has amended claim 10 to include the applicable terms applied by the Examiner.

With regards to the rejection of claims 10-13, 16-17, 22-23, and 26 under 35 USC 102(b) as being anticipated by Hocheng (US 6,315,885):

Independent claims 10 and 13 have been amended to include the limitations from presently canceled claim 16, which in relevant part provides, "... wherein a positive and a negative current/voltage pulses are used for the electrolytic [corrosion or coating] removal." As explained below, the ability to apply negative and positive polarity pulses significantly improves the coating removal process. The amendment of claims 10 and 13 are applicable to the appropriate dependent claims.

Applicant traverses the use of Hocheng with regards to claim 16 because Hocheng fails

to provide "...wherein a positive and a negative current/voltage pulses are used for the electrolytic [corrosion or coating] removal." Hocheng requires a specific electrical (DC) polarity configuration between the workpiece and the electrode and therefore does not provide dual electrical polarity operation provided by the instant invention. Hocheng does not suggest, nor is it capable of, providing both positive and negative current/voltage pulses for electrolytic coating removal. *See column 3, lines 1-4, column 3, line 65 – column 4, line 21, column 5, lines 29-30, and column 5, line 41 – column 6, line 48.*

In contrast, the instant invention, as shown in Figure 2 and Figure 3, applies a variety of pulse sequences, including reversing the polarity of the pulses. The ability to use both negative and positive current/voltage pulses aids in developing an optimized pulsing pattern matched to a constituent of an alloy to be removed, see paragraph [0027].

Where Hocheng does not provide a dual polarity (negative and positive) pulse, Hocheng does not teach the instant invention.

Further, where Hocheng expressly recites the workpiece is connected to the positive terminal of the DC source, Hocheng teaches away from connecting the workpiece to the negative terminal of the DC source because one of ordinary skill in the art would not apply the opposite polarity to a circuit which expressly recites the polarity to be used without specific teaching that it is safe to change the polarity of the applied current/voltage.

Since the effect of switching from a positive polarity pulse to a negative polarity pulse is the same as configuring the apparatus of Hocheng such that the workpiece is connected to the negative terminal of the DC source (rather than the positive terminal of the DC source), Hocheng is understood to teach away from switching the polarity of the pulses.

Applicant further traverses the use of Hocheng with regards to all claims because Hocheng admits it is for polishing a part after the milling of the part rather than being used to remove a layer of coating from the part. Hocheng is used to remove dregs and electro-polishing by products which are generally loose material.

In contrast, the present invention is used to remove coatings and corrosion layers and employs a more precise use of current/voltage pulses, including the use of negative and positive pulse polarities.

With regards to the rejection of claim 24 under 35 USC 103(a) as being unpatentable over Hocheng:

Applicant has amended independent claim 13 which is applicable to claim 24.

With regards to the rejection of claims 14, 20, 21 and 25 under 35 USC 103(a) as being unpatentable over Hocheng in view of Tyler et al. (US 4,004,992):

Applicant has amended independent claim 13 which is applicable to claims 14, 20, 21 and 25.

Further, it is noted that Tyler et al. uses a negative polarity DC voltage with negative pulses superimposed thereon.

Applicant traverses the use of the Tyler et al. reference in combination with Hocheng because the inventions are not functionally and operatively useable together, and the Tyler et al. reference changes the principal of operation of the primary reference Hocheng. Tyler et al. applies a negative polarity DC voltage with negative pulses superimposed thereon whereas Hocheng is designed use a positive polarity DC voltage and current. *See column 3, lines 1-4, column 3, line 65 – column 4, line 21, column 5, lines 29-30, and column 5, line 41 – column 6, line 48. See also MPEP 2143.02 paragraph VI.*

With regards to the rejection of claims 18-19 under 35 USC 103(a) as being unpatentable over Hocheng in view of Kool et al. (US 6,599,416):

Applicant has amended independent claim 13 which is applicable to claims 18 and 19. Further, it is noted that of Kool et al. uses a positive polarity DC voltage including positive pulses however Kool et al. does not apply both positive and negative current/voltage pulses for electrolytic coating removal and modifying Kool et al. to employ both positive and negative current/voltage pulses would change it's principal of operation.

Conclusion

In accordance with the above amendments and/or remarks the Examiner is requested to pass this application to issuance. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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